STYLITES, A NEW GENUS OF ISOETACEAE

ERIKA AMSTUTZ[1]

Stylites andicola E. Amstutz, gen. et spec. nov. Isoetacearum.

Plantae amphibiae vel subamphibiae in societatibus dense caespitosis supra margines paludum alpinorum frequentes. Caudices maximi crassi apice profunde bilobi usque 7 cm. longi 1.2 cm. lati vel ultra; cortice crassiusculo fusco cicatricibus foliorum vetustorum notato; radicibus per longitudinem uno latere caudicis valde secundis usque fere 5 mm. crassis speciminum nostrorum simplicibus fortasse tandem dichotomis. Folia in rosulis densissime imbricata oblongo-lanceolata apice anguste caudato-acuminata ibique valde reflexa ca. 5.0–5.5 cm. longa 5–8 mm. lata crassa margine partis basalis aut vaginae late hyalino medio et parte apicale grosse bullato. Sporangia usque 1.5 cm. supra basem foliorum instructa oblonga ca. 5 mm. longa 2 mm. lata e foveola tenue margine indistincto proventa; trabeculis paucis paxilliformibus; velo nullo; macrosporis albidis laevibus magnitudine aliquantulum dissimilibus ca. 428–643 μ latis; microsporis non visis. Ligula anguste cordato-triangularis 3–5 mm. longa. — Nomen e *στυλίτης* habitore in columna derivatur caudice notabili designans.

PERU: Depto. Lima, Prov. Huarochiri, above Casapalca near Caprichosa, in alpine bogs, alt. 4750 m., 2 July, 1956, *E. Amstutz 2000* (Herb. Missouri Bot. Gard., HOLOTYPE).

These curious plants were found on a moist and limy substrate around the boggy margins of a small glacial lake near Caprichosa, a few kilometers from Casapalca, central Peru, at an elevation of 4750 m. The plants live in extremely crowded colonies forming flat and dense cushions in a belt 2–3 m. broad and about 3–5 m. from the waters of the lake. The largest colonies consist of 40 or more individual plants. Better developed specimens were found in the peripheral parts of the larger cushions (50–60 cm. in diameter).

The plants apparently are well adapted to their environment. The leaves and upper portions of the caudices are aerial, but so crowded that considerable protection from the severe environment is effected. Associates of *Stylites andicola* are sods of peat and swamp bryophyta, convex and very hard cushions of *Distichia muscoides* (Juncaceae), tufts of *Calamagrostis chrysantha* (Gramineae), etc.

These plants display several innovations which deviate significantly from the very conservative architecture of all known species of *Isoetes*. The elongate caudices are outstanding; furthermore, in digging my specimens in the frozen soil, I unfortunately failed to obtain unbroken plants, and it seems possible that the

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[1] Graduate Student, Henry Shaw School of Botany of Washington University, St. Louis, Mo.
Issued March 22, 1957.

dense cushions may actually be formed through branching of the caudices of single plants, at least in part. The fleshy roots are borne along only one side of each caudex. Here, also, my excavation was not sufficiently careful, for all of the roots were cut during the process. However, in all attached roots which remain, some more than a decimeter in length, no branching may be seen. The short broad leaves with thick and recurved tips, to which effective photosynthesis appears to be restricted, are most exceptional; but most remarkable of all is the attachment of the sporangia far above the base of the sporophylls. The fovea is extremely shallow and the sporangium is less than half included within it. The trabeculae are few and peg-like. Unfortunately, microsporangia were not observed.

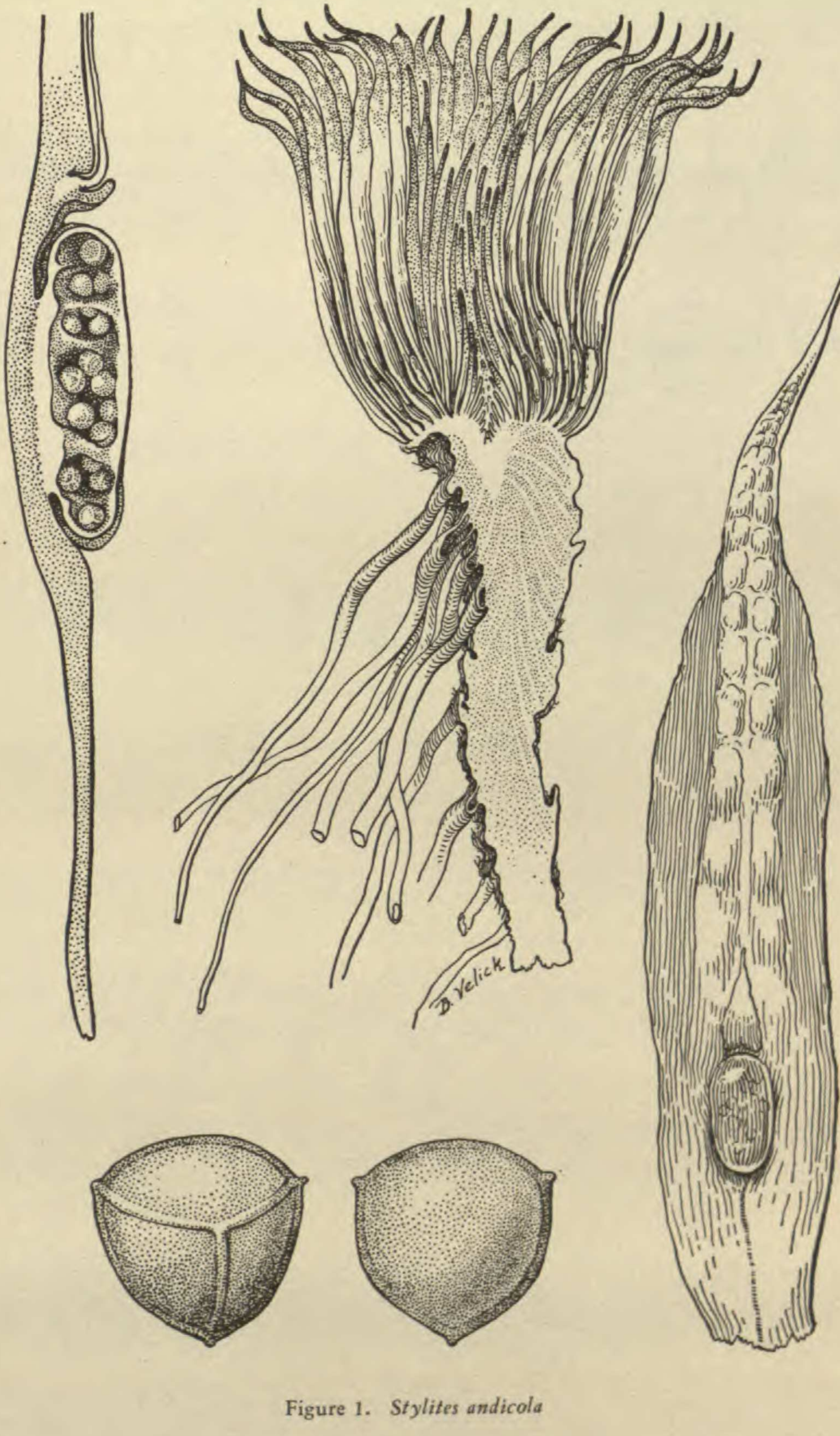

Figure 1. *Stylites andicola*